

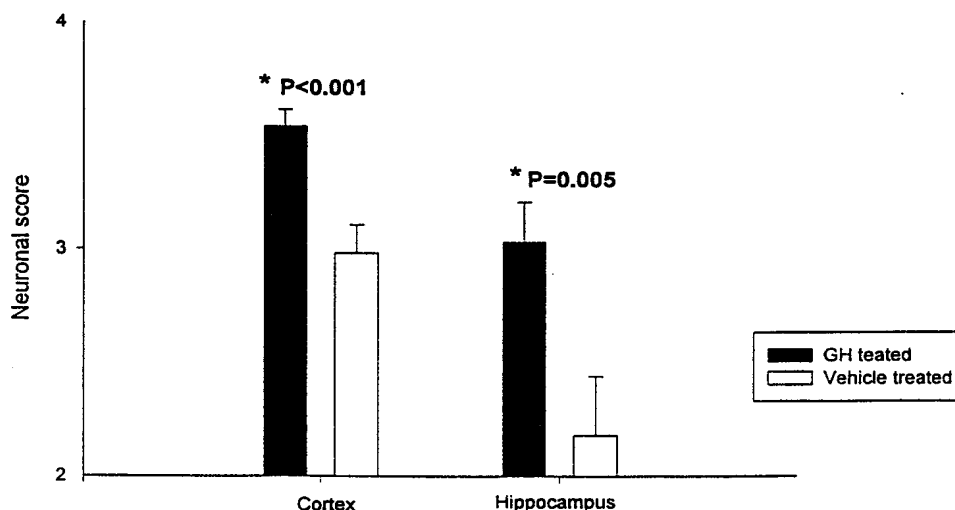


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A61K 38/27, 38/25		A3	(11) International Publication Number: WO 00/13650
			(43) International Publication Date: 16 March 2000 (16.03.00)
(21) International Application Number: PCT/NZ99/00147 (22) International Filing Date: 3 September 1999 (03.09.99) (30) Priority Data: 331719 3 September 1998 (03.09.98) NZ (71) Applicant (for all designated States except US): NEURONZ LIMITED [NZ/NZ]; UniServices House, 58 Symonds Street, Auckland (NZ). (72) Inventors; and (75) Inventors/Applicants (for US only): SCHEEPENS, Arjan [NL/NZ]; 95 Elmore Road, RD3, Albany, Auckland (NZ). WILLIAMS, Chris, Edward [NZ/NZ]; 2/73B Carlton Gore Road, Grafton, Auckland (NZ). GLUCKMAN, Peter, David [NZ/NZ]; 78 Lucerne Road, Remuera, Auckland (NZ). CLARK, Ross, Graham [NZ/NZ]; 25 Glen Road, Devonport, Auckland (NZ). (74) Agents: BENNETT, Michael, Roy et al.; West-Walker Bennett, Mobil on the Park, 157 Lambton Quay, Wellington (NZ).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report. (88) Date of publication of the international search report: 2 June 2000 (02.06.00)	

(54) Title: NEUROPROTECTION

Effect of ICV rat GH treatment on neuronal score following moderate HI



(57) Abstract

The invention relates to neuroprotection and to medicaments for use therein. Neuroprotection is induced by activation of neural growth hormone receptors, primarily using medicaments comprising growth hormone, growth hormone analogs or ligands which are functionally equivalent. Such medicaments may also include one or more secondary neuroprotective agents.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ 99/00147

A. CLASSIFICATION OF SUBJECT MATTER		
Int Cl ⁷ : A61K 38/27; 38/25		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC ⁶ : A61K		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPAT: BRAIN, GROWTH HORMONE, PROLACTIN, LACTOGEN, IGF-1, GRP, activin, NGF, TGF- β , bfgf		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98/16242 (Regeneron Pharmaceuticals Inc) 23 April 1998	1-29
X	WO 94/23754 (THE COMMONWEALTH OF THE UNITED STATES OF AMERICA AS REPRESENTED BY THE DEPARTMENT OF HEALTH AND HUMAN SERVICES) 27 October 1994	1-17,19,27,28,29
X	JP 2-67223 (DAI ICHI SEIYAKU CO LTD) 7 March 1990	1-18
<div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex </div>		
<p>* Special categories of cited documents:</p> <p>"A" Document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>	
Date of the actual completion of the international search 14 March 2000		Date of mailing of the international search report 22 MAR 2000
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No.: (02) 6285 3929		Authorized officer A. WILCOX Telephone No.: (02) 6283 2243

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ 99/00147

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 357240 (ETHICON INC) 7 March 1990	1-18
X	WO 91/14838 (CEPHALON INC) 13 December 1990	1-29
X	WO 93/08828 (SYNTEX-SYNERGEN NEURO SCIENCE JOINT VENTURE and THE GENERAL HOSPITAL CORPORATION) 13 May 1993	1-8,24-29
X	WO 96/40871 (CYTOTHERAPEUTICS, INC) 19 December 1996	1-18
X	WO 97/17090 (BAYLOR COLLEGE OF MEDICINE) 15 May 1997	1-29
X	AU 32571/97 (BOEHRINGER MANNHEIM GmbH) 18 December 1997	1-29
X	US 5750376 (NEUROSPHERES HOLDINGS LTD) 12 May 1998	1-29
X	WO 91/07947 (RAMSEY FOUNDATION) 13 June 1991	1-29

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/NZ 99/00147

Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The method of neuroprotection in the brain by administration of growth hormone is not novel. The claims to methods using analogues of growth hormone are considered to be directed to separate inventions. The claims lack special or novel technical features.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/NZ 99/00147

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
WO	98/16242	EP	938333				
WO	94/23754	AU	65312/94	CA	2159738	EP	696205
		US	5690927	US	5753491	US	5869463
		AU	60363/96	BR	9609154	CA	2221258
		CN	1192781	EP	832203	NZ	310048
		WO	96/39496				
JP	2-67223	JP	61143684				
EP	357240	AU	39244/89	CA	1332351	JP	2083334
		US	5057494	ZA	8905910		
WO	91/14838	AU	73633/91	CA	2057915	GB	2248248
		IT	1249409	NZ	237522	US	5299836
		FR	2659998	ZA	9101975		
WO	93/08828	AU	31297/93	US	5733871		
WO	96/40871	AU	61053/96	US	5837234		
WO	97/17090	AU	77195/96				
AU	32571/97	WO	97/47735	WO	97/47737	CN	1222191
US	5750376	AU	22425/92	CA	2113118	EP	594669
		FI	935929	NO	940056	WO	93/01275
		WO	94/16718	US	5981165	US	5750376
		US	5851832	US	5980885	AU	51474/93
		CA	2147162	EP	664832	FI	951677
		NO	951378	WO	94/09119	AU	53676/94
		AU	49241/97	EP	669973	FI	952022
		NO	951617	WO	94/10292	AU	60983/94
		CA	2155024	EP	681477	FI	953569
		NO	952985	AU	80561/94	CA	2175992
		CN	1141058	EP	728194	FI	961855
		NO	961859	WO	95/13364	AU	35152/95
		CA	2200709	EP	783693	FI	971168
		NO	971245	WO	96/09543	AU	38367/95
CONTINUED							

Patent Document Cited in Search Report				Patent Family Member		
		CN	1170435	EP	792350	FI 971956
		NO	972171	WO	96/15226	AU 38366/95
		CN	1170434	EP	792349	FI 971955
		NO	972170	WO	96/15224	
WO	91/07947	AU	69090/91	CA	2070823	EP 504263
		US	5624898			
<div>END OF ANNEX</div>						